

Claims

1. RFID apparatus comprising:  
5 transmission means for transmitting an RF signal; reception means for receiving a modulated RF signal; and demodulation means for demodulating a received modulated signal,  
wherein the apparatus comprises generating means for generating a RF signal dependent on an incoming RF signal, said incoming RF signal  
10 being generated by different apparatus,  
and wherein the apparatus is arranged to transmit said generated RF signal such that said generated RF signal interferes with the incoming RF signal.
- 15 2. RFID apparatus according to claim 1, wherein said generating means comprises phase sensitive means responsive to phase in said incoming RF signal.
- 20 3. RFID apparatus according to claim 2, wherein said generating means comprises a phase locked loop.
4. RFID apparatus according to claim 3, wherein the phase locked loop is a second order loop.
- 25 5. RFID apparatus according to claim 3 or 4, wherein the phase locked loop comprises loop filter means.
6. RFID apparatus according to any of claims 3 to 5, wherein the phase locked loop comprises sample and hold means.  
30
7. RFID apparatus according to any preceding claim, wherein

said apparatus is arranged to modulate said generated RF signal prior to transmission of said generated RF signal.

8. RFID apparatus according to any preceding claim, wherein  
5 the apparatus has a first mode of operation and a second mode of operation, wherein the apparatus is arranged such that:

during said first mode, the apparatus can transmit an RF signal to a first external device and can receive a modulated RF signal from said first external device; and

10 during said second mode, the apparatus can generate an RF signal dependent upon an incoming RF signal received from a second external device, and transmit said generated RF signal to said second external device.

15 9. RFID apparatus according to claim 8, wherein the first and/or second mode of operation is independently selectable.

10 10. RFID apparatus according to claim 9, wherein the mode of operation is selected in dependence on detection of an externally generated RF signal

25 11. RFID apparatus according to claim 8, 9 or 10, wherein the apparatus has a default mode of operation, and wherein the default mode of operation is said first mode of operation.

12. RFID apparatus according to claim 8, 9 or 10, wherein the apparatus has a default mode of operation, and wherein the default mode of operation is said second mode of operation.

30 13. RFID apparatus according to any preceding claim, wherein said apparatus comprises an antenna used commonly to both receive said

modulated RF signal and to transmit said generated RF signal.

14. RFID apparatus according to claim 13, wherein said antenna comprises an inductive coupling antenna.

5

15. RFID apparatus according to any preceding claim, wherein said apparatus comprises modulation means for modulating a carrier signal.

10 16. An electrical device incorporating an RFID apparatus according to any preceding claim.

15 17. An electrical device according to claim 16, wherein such electrical device is a mobile communications device, personal computer device, electronic wallet or purse, a vending machine, a watch, an ID device, an electronic ticket device, an access and entry system, a patient identification device or a medical device.

20 18. Radio frequency apparatus comprising both the means to respond to radio frequency reader apparatus and means to function as a radio frequency reader device.